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NOISE TRAINING PROJECT

# Audits of Laboratories on Environmental Measurements and Analyse Noise Measurements

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Antalya-Turkey – 16/01/2019

LTT-C3  
Activity

IMPROVEMENT OF ENVIRONMENTAL NOISE  
MANAGEMENT SKILLS ON AUDITS  
NOISE TRAINING PROJECT (NTP)



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ÇEVRE VE ŞEHİRCİLİK  
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# Legal Basis

- Regulation on Competency of Laboratories on Environmental Measurement and Analyze

with dated- 25 December 2013 and numbered 28862

- Regulation on Environmental Noise Assessment and Management

(with dated 4 June 2010 and numbered 27601





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# General Basis

- Laboratories should be accredited according to
- **TS EN ISO/IEC 17025**
- The validation duration of «Competency Certificate» is 5 years.



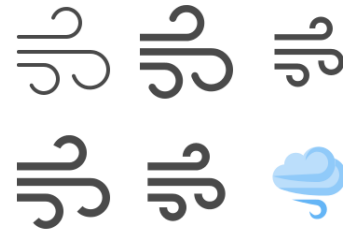
# Personnel

- He/She has knowledge and experience on
  - Environmental noise measurements and the number of reports to be prepared
  - Participation to validation studies
- He/She has capable of and knowledge on
  - Regulation on Environmental Noise
  - Measurement standards
  - Measurement equipment
- Participation to training courses on environmental noise
- Certification programs for environmental noise studies
  - Staff supporting to measurement on site - A1
  - Preparing of environmental noise assessment report- A2
  - Preparing acoustic report and noise mapping – B1
  - Noise mapping for transportation sources B1/B2
  - Insulation report- C1
  - Noise mapping for agglomerations –C2



# Environmental Conditions

- Determination of measurement time
- Weather and traffic conditions during the measurement
- For equipment safety, determination of environmental conditions and its control.
- Carrying/Moving conditions of sound level meters and calibrators



# Methodology

- Selection of valid national/international standard
- Use of final version of standards
- Establishing of Ulusal/uluslararası geçerli metot seçimi,
- Metotların en son yayımlarının kullanılması,
- Procedures for standard method
- Procedures for use and maintenance of equipments
- Procedures for measurement uncertainty and reporting for methods
- Control of documents and recordings
- Records and archives.



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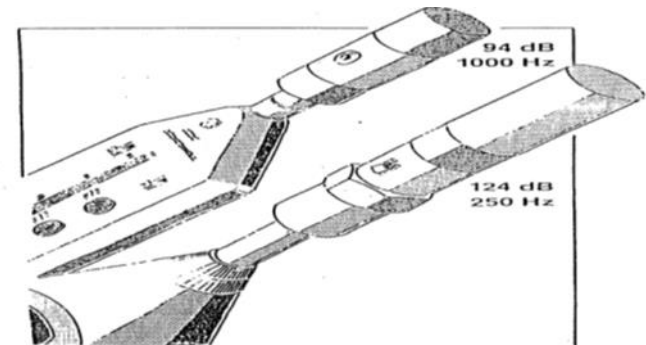
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# Equipments

- Sound level meter - IEC 61672:2002 –Type 1 –analyze in 1/1 octave band and 1/3 octave band
- Noise level meter -IEC 61672-1, its calibration- IEC 61672-3
- Calibrator and its calibration- IEC 60942
- Frequency weighting- A and C based on IEC 61672-1
- Time weighting- F, S and I
- Statistical distribution (LANT)
- List of equipment with model, serial number)
- Noise level meter with microphone protection, tripod and cable for long distance measurements
- Used by competent staff
- Labeling the equipment not to be used and which they are not working
- Procedures for records , measurements, maintenance and service time sheets

# Monitoring of Measurements

- General principles for sound level meter, calibrator, anemometer
  - Calibration plan (every year for calibrator, 2 year for sound level meter)
  - Calibration certificates
  - Determination of acceptance criteria for calibration and evaluation of availability of calibration certificates
  - Validation before and after measurements with calibrators (in 94/114 dB)
  - Determination of acceptance criteria for midterm controls and definition of their periods and records,
  - Making quality control graphics with records and their computation in electronically in order to ensure the measurement quality





# Measurements

- Feasibility pre-study before noise measurements – (noise source, effected areas from this noise, noise propagations)
- Working conditions of the studied source
- Control of noise level meter before measurement
- Check list including the measurement device and other equipment
- Filling the Noise Measurement Record Form
  - information regarding the measurements
  - 1/1 AND 1/3 octavo bands –A/C Weighting
  - Leq
  - Meteorological conditions during measurements
  - Measurement durations and points
  - Validation with calibrations (94 dB – 114 dB)
  - Microphone height both inside and outside measurements
  - Recording all measurement data on the noise level meter with record number and downloading these to the computer.



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# Quality of Measurement Data

- In the scope verification and validation of measurements
  - Internal and External Quality Control studies
- Parameters in the scope of «Competency Certificate of Laboratory»
  - Participating the «Comparison studies between the Laboratories»



# Reporting

- **Measurement reports for permission, audit or internal monitoring should include**
  - Logo of Ministry and Accreditation Institution, Number of Competency Certificate
  - Information accuracy for any legislative purpose use
  - Information on noise source (capacity, working duration)
  - Information on the area exposed to the noise
  - Information on measurement( measurement time interval, duration, microphone position)
  - Information on weather condition during the measurements (rain- wind)
  - Layout plan showing noise sources, exposed areas, measurement points
  - Evaluations for tonality, low frequency and impulsiveness
  - Annex of the report include
    - Calibration certificates for equipment
    - Training course certificate of the staff carrying on measurement
    - Spectrum analysis for each measurements
    - Photos for each measurement location

# Reporting

- For noise measurements,
  - All measurements should be done by laboratory itself,
  - It is not allowed to make measurement do other laboratory
- The cost of noise measurement is comply with the minimum amount determined by Ministry.
- All planning measurements should be entered to the information system of Ministry



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# Audits



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- **Ministry make control the laboratories**
  - In the scope of RAMEN and
  - Guideline for Environmental Noise Measurement and Assessment.
  
- If Ministry determine the violations
  - apply to sanction to the laboratory by giving the low score defined in the annex of Regulation



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# Teşekkürler

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